Original Article

The Impact of Interaction with Orphanage Children on Quality of Life of Elderly Females Residing in Old-Age Homes in a South Indian District: A Comparative Study

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Abstract

Introduction: Improving the quality of life (QOL) of the elderly has been one of the crucial challenges of public health with increasing life expectancy. The study was done to assess the impact on QOL and psychiatric morbidities among elderly females in old age homes (OAH) who had interaction with orphanage children. **Materials and Methods:** An analytical cross-sectional study was conducted among 105 elderly females who were residing in OAHs in Chittoor District, India, from Sep–Dec 2019. Data were collected using older people's QOL scale, Hamilton's Scales (HAM-A and HAM-D). Ethical approval was obtained from the Institutional Ethics Committee. Data were analyzed using the Statistical Package for the Social Sciences (SPSS), software version 20. **Results:** About 82.9% of elderly females in OAHs who were interacting with orphanage children had good QOL when compared to those who were not (8.6%). A significant difference was observed in domains scores for overall life, independent home and neighborhood, psychological and emotional well-being, and religion in the elderly who were interacting with orphanage children when compared to those who did not. Mean scores for depression and anxiety were significantly higher ($P = 0.001$) in those who were not interacting with the orphanage children (23.23, 43.74) than with interaction (13.46, 43.74). **Conclusions:** Overall QOL was better in elderly females who had interaction with orphanage children when compared to those who did not. Furthermore, psychiatric morbidities (depression and anxiety) were significantly higher in those who were not having interaction with orphanage children than those with interaction ($P = 0.001$).

Keywords: Anxiety, depression, elderly, females, orphaned children, quality of life

Introduction

The World Health Organization reports that the number and proportion of the older population are increasing. Around 1 billion older females were living in the year 2019 and by 2030 this will increase to 1.4 billion and gets double by 2050.[1,2] About developing countries there will be an unprecedented pace of increase and acceleration in the older age population. In India, the population of older females is projected to increase from 8% to 19% by the year 2050 requiring suitable adaptation in different sectors of the societies such as health, transportation, urban planning, and especially psychosocial care.[3]

Improving the quality of life (QOL) has been one of the crucial challenges of public health keeping in mind the continuum increase in life expectancy.[4] Reports indicate that there are wide variations between QOL of the general population and QOL of elderly females.[5] In developing countries like India better understanding by the caretakers is needed about the physical, mental, and psychosocial support for elderly females because of the facts about differences in QOL among those living in old age homes (OAH) and elderly in the general population.[6] Social care and healthy human relations along with the environment in which they live influence QOL.[7]

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The overall condition of the existing OAH in India is not satisfactory resulting in poor QOL as reported in earlier literature.[8] One of the solutions to improve the QOL of elderly females would be by placing them along with orphan children. However, there is a lack of published literature in exploring such attempts in our country and therefore in this background, the present study was done to assess the impact on QOL and psychiatric morbidities among elderly females in OAH who had interaction with orphanage children.

Materials and Methods

Study design, study area, and study participants

An analytical cross-sectional study was conducted among elderly females (age ≥60 years) who were residing in the OAH in Chittoor District of Andhra Pradesh, India from September 2019 to December 2019.

Sampling

A total of five old-age homes in the Chittoor district were selected for the study. Among these, residents (35 elderly females) of only one OAH were interacting with orphanage children on a day-to-day basis, hence selected for the study. For comparison, 70 elderly females in the other four OAHs in Chittoor district were selected, among which 18 elderly females each from two OAHs and seventeen each from two OAHs were selected randomly using simple random sampling with a list of elderly females in each OAH as the sampling frame. A total of 105 (35 from OAH interacting with orphanage children and 70 from other OAHs without interaction with orphanage children) elderly females were included in the study after seeking permission from the authorities of OAHs and obtaining written informed consent from the study participants. Elderly females staying for more than 1 year, willing to participate, and able to give consent were included in the study. We excluded those who were severely ill, bedridden, or have cognitive impairment.

Data collection

A pretested semi-structured pro forma was used to collect the information from the study participants in two parts. The first part included information on sociodemographic factors such as age, type of family, marital status, literacy level, and the reasons for residing in OAH were collected. The socioeconomic status of the study participants was categorized based on modified BG Prasad classification.[9] The second part of the questionnaire had an assessment of QOL and Psychiatric morbidity. QOL was assessed by using the "Older People's Quality of Life Questionnaire (OPQOL-35)" which is a validated 35 item-based questionnaire covering eight domains such as life overall (4items), health (4items), social relationships (5items), independence, control over life and freedom (4items), home and neighborhood (4items), psychological and emotional wellbeing (4items), financial circumstances (4items) and leisure, activities, and religion (6items). OPQOL-35 is a five-point Likert scoring scale wherein responses range from 1 for strongly agree to 5 as strongly disagree.[10,11] The questionnaires used in the study were administered by interview technique for both literate and illiterate study participants in the local language, Telugu.

OPQOL-35 has greater applicability in diverse geriatric populations with intact cognitive function and mild dementia and with excellent internal consistency and construct validity.[5,12,13] QOL was considered better when the score was high and worst QOL in the case of lower scores. For positively worded questions reverse coding was applied. The OPQOL-35 was translated into the local language, Telugu, and used in the study. The forward translation from English to Telugu was done by two independent bilingual translators with proficiency in both languages. The backward translation of the questionnaire into English was done by two independent bilingual language experts and checked for consistency. Participants were stratified into having good QOL (above mean score) and bad QOL (below mean score) based on consideration of mean OPQOL score as cut-off value.[14]

To assess the psychiatric morbidity among elderly females we used the validated Hamilton Anxiety Scale (HAM-A) and Hamilton Depression Rating Scale (HAM-D) that was translated into Telugu, the local language, and back-translated for checking consistency as described above for OPQOL Questionnaire. Based on the scoring anxiety was categorized as mild (<17), mild to moderate (18–25), and moderate-to-severe (26–30) depression was classified into no depression (0–7), mild depression (8–16), moderate depression (17–23), and severe depression (≥24).[15,16]

Statistical analysis

The collected data were entered, coded, and analyzed in the IBM SPSS Statistics for Windows, version 20.0 (IBM Corp., Armonk, N.Y., USA).[17] Continuous variables and categorical data were expressed in mean ± standard deviation and frequency (percentage), respectively. Mann–Whitney *U*-test was applied to compare the mean differences of various domains of OPQOL and psychiatric morbidities (HAM-A and HAM-D) between the two groups. Factorial Analysis of Variance-ANOVA analysis was conducted to compare the effect of age, education, interaction with children, marital status, family type, and pension on the total OPQOL scores. A value of $P < 0.05$ was considered statistically significant.

Ethical considerations

Ethical approval was obtained from the Institutional Ethics Committee of a medical college in Andhra Pradesh, India vides letter no. IEC10/AIMSR/02/2018 dated August 23, 2018. Before the interview, written informed consent was obtained from each respondent, and they were assured about the confidentiality of information. The research followed the guidelines laid down in the Declaration of Helsinki, updated in 2013. For illiterate participants, informed consent was obtained in the presence of a witness independent of the research team.

Results

A total of 105 elderly females residing in OAHs participated in the study of which 35 had frequent interaction with orphan children. The majority of the participants (35.2%) were in the age group of 60–69 and 70–79 years. The majority of elderly females who did not have interaction with orphan kids were illiterates (42.9%), homemakers (100%), widows (77.1%), belonged to the nuclear family (80.0%), financially independent (51.4%) when compared to elderly females in OAHs with formal interaction [Table 1].

The most common reasons to be shifted to OAHs in both the groups were nobody to take care of them or no children, death of the husband (48.6%), son and daughter-in-law not willing to take care of them (40.0%), and children left them (married)/husband left them (11.4%).

About 82.9% (29 out of 35) of elderly females in OAHs who were interacting with orphan children had good QOL in comparison with 8.6% (6 out of 70) of elderly females who were not interacting with orphan children had good QOL. The mean OPQOL score of the overall study participants was 60.18 ± 22.3 out of the highest possible score of 175, ranging from 28 to 132. The mean OPQOL score among elderly females residing in OAH interacting with orphanage children was 84.43 ± 21.63 when compared to those without interaction with

Table 1: Baseline characteristics of elderly people living in old age homes

Variables	Elderly living in OAH not having interaction with orphanage children (*n*=70), *n* (%)	Elderly living in OAH having interaction with orphanage children (*n*=35), *n* (%)	Total (*n*=105), *n* (%)
Age group (years)			
60-69	24 (34.3)	13 (37.1)	37 (35.2)
70-79	28 (40.0)	9 (25.7)	37 (35.2)
80 and above	18 (25.7)	13 (37.1)	31 (29.5)
Education			
Illiterate	30 (42.9)	13 (37.1)	43 (41.0)
Primary	20 (28.6)	2 (5.7)	22 (21.0)
Secondary	16 (22.9)	10 (28.6)	26 (24.8)
Higher secondary	4 (5.7)	9 (25.7)	13 (12.4)
Graduation and above	0	1 (2.9)	1 (1.0)
Occupation			
Homemaker	70 (100.0)	32 (91.4)	102 (97.1)
Semi professional	0	1 (2.9)	1 (1.0)
Professional	0	2 (5.7)	2 (1.9)
Marital status			
Married	4 (5.7)	1 (2.9)	5 (4.8)
Unmarried	8 (11.4)	6 (17.1)	14 (13.3)
Separated/divorced	4 (5.7)	0	4 (3.8)
Widow	54 (77.1)	28 (80.0)	82 (78.1)
Type of family the participant lived before moving to old age home			
Nuclear	56 (80.0)	27 (77.1)	83 (79.0)
Joint	14 (20.0)	8 (22.9)	22 (21.0)
Economic dependency			
Independent	36 (51.4)	26 (74.3)	62 (59.0)
Dependent	34 (48.6)	9 (25.7)	43 (41.0)
Socioeconomic status			
Class I	4 (5.7)	0	4 (3.8)
Class II	2 (2.9)	0	2 (1.9)
Class III	0	2 (5.7)	2 (1.9)
Class IV	36 (51.4)	22 (62.9)	58 (55.2)
Class V	0	11 (31.4)	11 (10.5)
Children			
Yes	42 (60.0)	17 (48.6)	59 (56.2)
No	28 (40.0)	18 (51.4)	46 (43.8)
Reason to shift to old age home			
Nobody is there to take care/no children, husband died	34 (48.6)	17 (48.6)	51 (48.6)
Son and daughter in law not willing to take care	34 (48.6)	8 (22.9)	42 (40.0)
Children (married)/husband left	2 (2.9)	10 (28.6)	12 (11.4)

OAH: Old age home

orphanage children in whom the mean score was 48.06 ± 8.76 and this difference was statistically significant (P = 0.001). About mean domain scores of OPQOL between the two groups, scores for domains related to life overall, independence or control over life, home and neighborhood, psychological and emotional well-being, and religion/culture were higher (8.57, 5.37, 15.97, 22.11, 21.86) in those elderly females who had regular interaction with orphan children when compared to those who did not (5.23, 0.80, 13.03, 10.71, 10.49) and the differences were statistically significant (P = 0.001). A similar observation was made in the health domain too where the differences were statistically significant (P < 0.05) [Table 2].

The assessment of psychiatric morbidities (depression and anxiety) between the two groups revealed that the mean scores of HAM-D (23.23) and HAM-A (43.74) were significantly higher (P = 0.001) in those who were not having any sort of interaction with orphanage children (13.46) than those with interaction (43.74).

Factorial ANOVA analysis for the total OPQOL scores showed that age, literacy levels, marital status, and interaction with orphanage children had a significant effect on the QOL of the study participants (P = 0.001) [Table 3].

Discussion

Geriatric health in terms of health and social welfare of the elderly population is an integral part of national health issues in developed countries globally. In recent years, this has been gaining attention in developing countries too as it was a long-neglected area of the health domain.[18] India has made a sincere effort to focus on key areas of provision of health and social welfare to the above-said target population.

Our study attempted to assess the impact of the unique approach of interaction with orphanage children on QOL and psychiatric morbidities among elderly females in OAH. Since this was a unique and novel approach and nonavailability of published literature, we tried to compare our study findings with those studies done on elderly members living in the families or the community dwellings because of the similarities in the impact of human interactions on the QOL and also on psychiatric morbidities.

In our study, more than two-thirds of the elderly in OAHs were widowed and aged more than 70 years which was similar to findings reported in Maharashtra by Amonkar *et al*. and by Mishra and Chalise.[6,18] This is could be probably due to nobody being there to take care of or no children or the death of husband and issues such as family abuse either by kids or their son or daughter-in-law as it was observed in our study.

Our study reported that the overall QOL was higher in the elderly who were interacting with children from orphanages (84.43) when compared to those who are not (48.06) which was statistically significant and similar to the findings reported in Pakistan by Siddiqui *et al*.[2] wherein the scores in those living with family members (125.24) was higher than those living in OAHs (106.36) which was also in similar to findings by Mares *et al*., Demirkıran *et al*. and Piya *et al*.[2,19-21] However, a study conducted by Amonkar *et al*. reported an overall QOL

Table 2: Quality of Life assessment by older people's Quality of Life Scale

OPQOL domains	Elderly interaction with children	*n*	Mean	SD	Mann–Whitney *U*-test statistics	*Z*	*P*
Life overall	Yes	35	8.57	2.118	254	−6.704	0.001
	No	70	5.23	1.505			
Health	Yes	35	1.54	1.442	899	−2.299	0.021
	No	70	0.74	0.206			
Social relationships/leisure and social activities	Yes	35	8.97	4.169	946	−1.907	0.056
	No	70	7.20	2.5			
Independence, control over life, freedom	Yes	35	5.37	2.289	265	−6.559	0.001
	No	70	0.80	3.044			
Home and neighborhood	Yes	35	15.97	1.339	281	−6.495	0.0001
	No	70	13.03	2.160			
Psychological and emotional well-being	Yes	35	22.11	9.317	153	−7.321	0.001
	No	70	10.71	2.814			
Financial circumstances	Yes	35	0.03	0.785	1207	−0.148	0.883
	No	70	-0.14	0.997			
Religion/culture	Yes	35	21.86	9.623	239	−6.743	0.001
	No	70	10.49	3.225			
OPQOL	Yes	35	84.43	21.63	44	−8.035	0.001
	No	70	48.06	8.76			
HAM-D	Yes	35	13.46	8.692	490	−5.002	0.001
	No	70	23.23	8.208			
HAM-A	Yes	35	26.43	5.853	38	−8.079	0.001
	No	70	43.74	7.519			

OPQOL: Older People's Quality of Life Scale, HAM-D: Hamilton's Depression Rating Scale, HAM-A: Hamilton's Anxiety Rating Scale, SD: Standard deviation

Table 3: Factorial analysis of variance older people's Quality of Life Scale-35 total score as the dependent variable

Source	Type III sum of squares	df	Mean square	*f*	*P*
Corrected model	49,869.245	45	1108.205	29.581	0.000
Intercept	167,090.749	1	167,090.749	4460.155	0.000
Age	263.192	2	131.596	3.513	0.036
Education	2325.807	4	581.452	15.521	0.000
Interaction with children	5312.489	1	5312.489	141.806	0.000
Marital status	1769.500	3	589.833	15.744	0.000
Family type	16.063	1	16.063	0.429	0.515
Pension	17.587	1	17.587	0.469	0.496
Age education*	2840.232	4	710.058	18.954	0.000
Age interaction with children*	469.844	1	469.844	12.542	0.001
Age family type*	420.500	1	420.500	11.224	0.001
Age pension*	0.500	1	0.500	0.013	0.908
Education family type*	40.157	1	40.157	1.072	0.305
Family type pension*	0.143	1	0.143	0.004	0.951
Error	2210.317	59	37.463		
Total	432,363.000	105			

*Interaction

score higher in those who are residing in the family (64.41) than those who are staying in OAHs (59.42), but the results were not statistically significant.[6] These findings could be due to factors such as a better family environment, care, love, and affection offered by family members and relatives. Some studies done in other parts of India had reported contrasting findings stating that better QOL in those who are in nursing home residents when compared to family settings.[22]

About different domains of QOL scores for life overall, independence or control over life, home, and neighborhood, psychological and emotional well-being, and religion/culture were higher in those interacting with orphanage children than those who did not which is similar to findings by Panday *et al*., Khaje-Bishak *et al*., and Siddiqui *et al*. except for the health domain wherein it was lowest in both the groups.[2,23,24] Although the scores for the social domain was higher in the interaction group, it was not statistically significant and a study done in Jammu by Dubey *et al*. reported the same which was in contrast to findings by Scocco *et al*. in Brazil and Chandrika *et al*. in Vishakhapatnam wherein significant difference social domain scores in was observed between those living in community and OAHs.[25-27] This could be due to variations in socioeconomic conditions, leisure activities, and availability of facilities in the OAHs.

We noticed in our study higher scores for depression and anxiety in those who did not involve in interaction (23.23 ± 8.2, 43.74 ± 7.5) when compared with those who are (13.46 ± 8.6, 26.43 ± 5.8) which was similar to findings reported by Amonkar *et al*., Kouvatsou *et al*. Seddigh *et al*.[6,4,28] Study by Praveen Kumar *et al*. also reported a higher prevalence rate of depression in OAH elderly (75%) persons when compared with those living with the family (57.1%).[29] A study done in Andhra Pradesh by Singh AP reported contrast findings stating a higher prevalence of (25%) depression in elderly at OAHs than those in community dwellings (21.7%).[30] Factors like adjustment with rigid and tight schedules, isolation from the family and social life might influence the psychiatric health of the elderly in OAHs.

Our study revealed age, literacy levels, marital status, and interaction with orphanage kids had a significant effect on the overall QOL and the interaction effect of age with the rest of the factors except pension had a significant impact on the satisfaction of life as a whole. These findings are in concordance with findings reported by Mares *et al*. in Czech.[19] A study done among the elderly residents of Gorgan by Chehregosha *et al*. showed marital status and educational levels were significantly influencing overall QOL, whereas Tajvar *et al*. reported educational levels influencing QOL among elderly residents in Tehran.[31,32] These findings are suggestive of the significant effect of various sociodemographic factors on overall QOL.

Limitation

A small sample size and only two psychiatric morbidity conditions were studied. Only elderly females were included in the study because the OAH had a unique and novel approach of social interaction between two extremes of age (elderly and children) deprived of family relations but living under similar environments (OAH and Orphanage) had only female residents.

Conclusions

In this study, overall QOL was better in elderly females who had interaction with orphanage children when compared to those who did not ($P = 0.001$). Furthermore, our study revealed that the psychiatric morbidities (depression and anxiety) were significantly higher in those who were not having any sort of interaction with orphanage children than those with interaction ($P = 0.001$). Factors such as literacy levels, age,

and marital status had a significant effect on the overall QOL of elderly females ($P = 0.000$).

Recommendations

OAH shall arrange for regular interaction of elderly with orphanage children which improves their QOL as supported by our study findings. This study could form the basis for further studies with a larger sample size (multicentric studies including OAHs that arrange for regular interaction of elderly with orphanage children) so that the results can be generalized and implemented by the government and nongovernmental agencies that may improve the overall QOL of elderly.

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Conflicts of interest

There are no conflicts of interest.

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